

Weight Changes after Ankle Fracture

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INTRODUCTION: Ankle fractures are a common orthopaedic injury, with an incidence rate of 4.22/10,000 person-years. Patients frequently require surgery to appropriately reduce the joint and require considerably lengthy periods of weight-bearing restrictions to fully recover. This period of inactivity could lead to decreased activity and energy expenditure, thus leading to increases in patient weight and BMI. The purpose of this study was to evaluate the weight changes patients experience in the postoperative period during their recovery following ankle fracture surgery.

METHODS: This was a retrospective study. Hospital billing records were used to identify all patients who underwent open reduction internal fixation of the ankle at our hospital system (consisting of a Level 1 Trauma Center and Level 3 community hospital) between January 1, 2018 and June 30, 2021. Patient records were reviewed for weight data at their outpatient postoperative visits with their surgeon at about 2 weeks, 3 months, 6 months, and 1 year. Patients were excluded from analysis if their charts did not have complete weight data up to 3 months out from surgery or if their weight data was copied and pasted from their previous visits. Student's t-test was used for statistical analysis to compare weight and BMI at time of surgery to the subsequent timepoints.

RESULTS: Fifty-eight patients met inclusion criteria. The mean age at surgery was 44.6 ± 16.2 years. There were 28 women and 30 men. At time of surgery, the mean weight was 198.3 ± 53.3 lbs and BMI was 30.4 ± 7.0 kg/m². At their first postoperative visit, the mean weight was 197.8 ± 53.5 lbs and BMI was 30.4 ± 7.1 kg/m² ($p > 0.05$). At 6 weeks postoperative, the mean weight was 197.5 ± 53.5 lbs and BMI was 30.4 ± 7.1 kg/m² ($p > 0.05$). At 3 months postoperative, the mean weight was 199.5 ± 52.2 lbs and BMI was 30.7 ± 6.9 kg/m² ($p > 0.05$). At 6 months postoperative, the mean weight was 207.9 ± 52.6 lbs and BMI was 31.9 ± 7.2 kg/m² ($p > 0.05$). At 1 year postoperative, the mean weight was 219.2 ± 51.6 lbs and BMI was 33.5 ± 7.1 kg/m², which were both significantly different compared to weight and BMI at time of surgery ($p = 0.0491$ and 0.0330 , respectively). On subgroup analysis of patients within different preoperative BMI groups (< 25 , $25-29$, $30-34$, and ≥ 35), the same weight increase (about 20 lbs) and BMI increase (about 3 points) were observed across all BMI groups at 1 year.

DISCUSSION AND CONCLUSION: To our knowledge, this is the first study to evaluate weight changes following ankle fracture. Interestingly, weight and BMI do not change in the early postoperative period. By 6 months, however, patients recovering from ankle open reduction internal fixation gain about 10 lbs and 1.5 BMI points, on average; by 1 year, they gain about 20 pounds and 3 BMI points, on average. Awareness of these increases is crucial for providers so that they may address this risk with patients and establish alternate methods for preventing unhealthy weight gain during recovery.